Name of Organization: USACE, Chicago District

Type of Organization: Federal Agency

Contact Information: Mr. Thomas Fogarty

Hydraulic and Environmental Engineering Branch

111 N. Canal St.

Chicago IL 60645

Phone: (312) 353 - 6400 **Extension:** 3100

Fax: (312) 353 - 2156

E-Mail: thomas.j.fogarty@usace.army.mil

Project Title: Monitoring Roxana Marsh During a Cleanup Demonstration

Project Category: Contaminated Sediments

Rank by Organization (if applicable): 0

Total Funding Requested ($): 125,000 **Project Duration:** 2 Years

Abstract:

Roxana Marsh is a wetland within the highly contaminated Grand Calumet / Indiana Harbor & Canal Area of Concern (AOC) in northwest Indiana. As part of the 401 Remedial Action Program, the Corps of Engineers may receive FY 2001 funding to conduct a cleanup demonstration with the marsh. This funding would be cost shared, either through funding or by in-kind services, with the Indiana Department of Environmental Management. The demonstration project would consist of evaluating two different in-situ remediation techniques (e.g. biological or chemical) for cleaning up and restoring the marsh. It is anticipated that the remediation activities would be run under the direction of the Corps of Engineers and Indiana Department of Environmental Management, by faculty and students from Purdue University and the University of Illinois.

A grant is being requested from the USEPA, GLNPO to support monitoring of the impacts and benefits of the two demonstration projects. Faculty and students from Indiana University, Northwest would perform the monitoring. It is anticipated that monitoring would consist of taking air, soil and water samples from areas near the demonstration projects, but in a location safe for student samplers. Additionally, an uncontaminated control wetland would also be monitored. The Corps of Engineers would develop the scope of the activities and provide technical and administrative oversight.

Geographic Areas Affected by the Project

States:

- ☐ Illinois
- ☒ Indiana
- ☐ Michigan
- ☐ Minnesota
- ☐ New York
- ☐ Pennsylvania
- ☐ Wisconsin
- ☐ Ohio

Lakes:

- ☐ Superior
- ☐ Huron
- ☒ Michigan
- ☐ Erie
- ☐ Ontario
- ☐ All Lakes

Geographic Initiatives:

☐ Greater Chicago ☐ NE Ohio ☒ NW Indiana ☐ SE Michigan ☐ Lake St. Clair

Primary Affected Area of Concern: Grand Calumet River/IHC, IN

Other Affected Areas of Concern:

For Habitat Projects Only:

Primary Affected Biodiversity Investment Area:

Other Affected Biodiversity Investment Areas:

Problem Statement:

Northwestern Indiana is a heavily industrialized area with high background concentrations of pollutants. Roxana Marsh is one of the few remaining wetlands in this area, however the marsh has been affected by pollution discharge over the years. Pollutants which can be found in high mg/kg concentrations in Roxana Marsh include PCBs, PAHs, and metals (including very high concentrations of some metals). "Traditional" remediation activities such as incineration would require the destruction of the wetland to remove the contaminated soils. A remediation technique which would address the pollution problems at the marsh while maintaining and restoring the habitat is needed for this site.

Proposed Work Outcome:

The proposed project is the monitoring, remediation, and restoration of a degraded urban wetland. Roxana Marsh will be divided into remediation and control sections. The control section will be monitored by students at Indiana University, and the remediation will be implemented and monitored by researchers from Purdue University and the University of Illinois. Data from Roxana Marsh would be compared to data obtained by monitoring a similar, but uncontaminated, wetland in northern Indiana. The project would have several distinct outcomes.

· First, monitoring data would be obtained on the Roxana Marsh, to document the quality of the environment before, during, and after remediation. This type of comprehensive information will increase knowledge on impaired habitats and the restoration of urban wetlands, as compared to wetlands which are largely unaffected by pollution. Parameters to be measured include general chemical and biological parameters in water and soil, general air quality monitoring, and plant and animal species documentation.

· Second, the project would provide a unique educational opportunity for college students in northwestern Indiana. This project is an excellent opportunity for students interested in biology, limnology, chemistry, and ecology to apply laboratory skills to a field situation, and to learn more about a poorly studied category of wetlands (i.e., degraded urban wetlands.)

· Third, this project provides an opportunity for the field scale demonstration of in-situ remediation and habitat restoration. Given the number and variety of pollutants in the Roxana Marsh, this will be an 'acid test' of remediation technology. A realistic test of remediation technology will provide information for cost and effectiveness estimates, information which will aid in the design of remediation of similar sites.

· Funding provided by this EPA grant would be used to support monitoring and outreach activities. The remediation activities would be supported by the Corps of Engineers and the Indiana Department of Environmental Management through a cost sharing agreement under the 401 Remedial Action Program.

Project Milestones:	Dates:
Project Start	10/2000
Coordinate Staffing / Equipment Needs	10/2000
Purchase Sampling Equipment	02/2001
Complete Test Sampling	06/2001
Complete First Year Sampling and Report	09/2001
Complete Second Year Sampling and Report	09/2002
Public Meeting	09/2002
Project End	10/2002

☐ Project Addresses Environmental Justice

If So, Description of How:

☒ Project Addresses Education/Outreach

If So, Description of How:

This project directly involves students from Indiana University, Northwest for field monitoring and data analysis. The project also involves faculty and students from Purdue University and the University of Illinois, and may be the basis for graduate work at those institutions. It is anticipated that the results of both the monitoring and the remediation work will be presented at national conferences such as those of the Water Environment Federation or of the American Society of Civil Engineers. In addition, the principal investigators are committed to presenting the results of the study at local high schools or for other northwestern Indiana groups, as a means of raising awareness of local pollution issues and of opportunities for study in science and engineering fields.

Project Budget:

	Federal Share Requested ($)	Applicant's Share ($)
Personnel:	100,000	0
Fringe:	0	0
Travel:	0	0
Equipment:	25,000	0
Supplies:	0	0
Contracts:	0	0
Construction:	0	0
Other:	0	0
Total Direct Costs:	125,000	0
Indirect Costs:	0	0
Total:	125,000	0
Projected Income:	0	0

Funding by Other Organizations (Names, Amounts, Description of Commitments):

Funding provided by this EPA grant would be used to support monitoring and outreach activities. It is anticipated that the grant funding would be required as follows:

Item	FY 2001	FY 2002
Equipment/Supplies	$25,000	
IU / NW Labor	$35,000	$35,000
US Corps' Labor	$15,000	$15,000

It is anticipated that USEPA would provide the funds for equipment and IU/NW labor directly to the university.

The remediation activities would be supported by the Corps of Engineers and the Indiana Department of Environmental Management through a cost sharing agreement under the 401 Remedial Action Program. It is anticipated that the funding would be as follows (note, this is subject to both congressional adds and to agreements with and by the State of Indiana).

Item	FY 2001	FY 2002
US Corps' Funds	$425,000	$425,000
IDEM Funds/Services	$425,000	$425,000

Description of Collaboration/Community Based Support:

Roxana Marsh is a wetland within the highly contaminated Grand Calumet / Indiana Harbor & Canal AOC in northwest Indiana. There is strong support on the part of the Corps of Engineers - Chicago District, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the Indiana Department of Environmental Management, local residents and environmental groups to remediate and restore this AOC.

The cleanup of this area is currently under the purview of a local group, the Citizens Advisory for the Remediation of the Environment (CARE) committee. The CARE committee was established under Indiana statute with the express purpose of overseeing the development and implementation of the Remedial Action Program (RAP) for the remediation and restoration of the AOC. The Corps of Engineers has partnered with the Indiana Department of Environmental Management on several past RAP activities, and these have always been fully coordinated with the CARE committee.

Additionally, the U.S. Army Corps of Engineers, Chicago District, is currently preparing an expedited reconnaissance study to examine the federal interest in environmental dredging of the Grand Calumet River / Indiana Harbor Canal under Section 312 of the Water Resources Development Act of 1990. The purpose of the project would be to remove contaminated sediment from the AOC in reaches that are not addressed by cleanup efforts by other private and governmental entities.

The proposed new RAP studies of in-situ remediation, and the monitoring to be provided under the USEPA grant, would also serve the purpose of providing valuable input into the alternative selection and environmental impacts for this project.